VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
LYNCHBURG SATELLITE OFFICE

FACT SHEET
FOR PROPOSED PERMITTING ACTION
UNDER 9 VAC 5 Chapter 80 Article 1 (TITLE V-CLEAN AIR ACT)

APPLICANT:

VA-30297 AIRS ID 51-0143-0005
Solite Corporation
Route 1, Box 101
Cascade, VA 24069

FACILITY LOCATION:

101 Solite Road, Cascade
UTM Coordinates are ZONE: 17 EASTING: 619.1 km NORTHING: 4044.7 km

FACILITY DESCRIPTION:

Solite Corporation is a lightweight aggregate manufacturing operation, covered by SIC Codes 3295 and 4953. The Cascade facility quarries shale/slate on-site and may also receive shale/slate from off-site. Raw materials are crushed and may be sold; however, most of the raw material is heated in rotary kilns which expand the shale/slate into light-weight aggregate clinker. Fuel for the kilns is primarily hazardous waste fuel but may also be natural gas, residual oil, distillate oil, coal, or any combination of the approved fuels. Giant Resource Recovery, Inc., the hazardous waste fuel provider, is located adjacent to Solite. Giant Resource Recovery receives hazardous and non-hazardous wastes from off-site generators and blends the material into hazardous and non-hazardous waste fuels for Solite and other (off-site) customers.

For Title V permitting purposes, Giant Resource Recovery and Solite are considered to be a single source, and requirements for all activities at the source are included in this permit.

The Solite Cascade facility is a Title V major source of SO_2, NO_x, PM, HCl, and Cl_2. The source is located in an attainment area for all pollutants. The plant is allowed to operate twenty-four (24) hours per day, seven (7) days per week, fifty-two (52) weeks per year.

COMPLIANCE STATUS:

The source was last inspected on June 19, 2001, and was found to be in compliance. The required annual emission statement and certification were submitted by Solite on March 19, 2001. The notification of intent to comply with Subpart EEE was submitted on October 2, 2000, as required.

EMISSIONS SUMMARY:

PLANTWIDE EMISSIONS SUMMARY [TONS PER YEAR]	
CRITERIA POLLUTANTS	2000 ACTUAL EMISSIONS
Particulate Matter (PM10)	9
Nitrogen Oxides (NOx)	186
Sulfur Dioxide (SO2)	440
Volatile Organic Compounds (VOC)	5
PLANTWIDE EMISSIONS SUMMARY [TONS PER YEAR] (Cont'd)	
HAZARDOUS AIR POLLUTANTS	2000 ACTUAL EMISSIONS
Total HAPs	108
Chlorine	3
HCl	105

TITLE V PROGRAM APPLICABILITY BASIS:

This facility has the potential to emit more than 100 tons per year of SO_2 , NO_x, and PM. The facility also has potential to emit more than 10 tons per year each of chlorine and hydrochloric acid, and more than 25 tons per year of total HAPs. Due to this facility's potential to emit over 100 tons per year of a criteria pollutant and 25 tons per year of HAPs, Solite is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 9 VAC 5 Chapter 80 Article 1.

Applicable Regulations/Existing Permits

The following federal regulations apply:

- Hazardous Waste Combustion (HWC) MACT, 40 CFR 63, Subpart EEE (kilns)
- Off-site Waste and Recovery MACT, 40 CFR 63, Subpart DD
- Benzene Waste Operations NESHAP, 40 CFR 61, Subpart FF
- Nonmetallic Mineral Processing NSPS, 40 CFR 60, Subpart OOO (specified units)
- Volatile Organic Liquid Storage Vessel NSPS, 40 CFR 60, Subpart Kb (Tank 23)

Additionally, Solite is subject to state regulations including Rule 4-19 (Lightweight Aggregate Processing) and Rule 4-14 (Stone Quarrying and Processing Operations). In accordance with 9 VAC 5-40-240 D, because these emission standards apply, Solite is not subject to Rule 4-4 (Emission Standards for General Process Operations).

Although much of the facility is regulated under existing source regulations, the following permits apply to the facility:

- September 17, 2001, for a portable screening and crushing operation (Registration Number 32007)
- March 19, 2001, for (4) 10" bucket elevators (BE1-BE4)
- December 17, 1999, for a primary jaw crusher (JCR1)
- June 5, 1997, for an 8' x 16' Deister screen (SCR1) and a 30" belt conveyor (CRC1)

Notification and initial testing requirements in those permits which have been completed were not incorporated into the Title V permit.

All storage tanks (T1-T7 and T11-T23) are subject to Section 112 (r) of the 1990 CAAA (accidental release of HAPs). Solite states (letter dated 6/28/01 from Lane Smith to Margaret Key) that the facility is in compliance with the Level 2 Standards of 40 CFR 68.

Periodic Monitoring

Kilns

Applicable monitoring requirements under the Hazardous Waste Combustion (HWC) MACT, 40 CFR 63, Subpart EEE, are contained in Section VIII of the permit. The MACT requires continuous monitoring for CO or hydrocarbon (in conjunction with monitoring for oxygen), and contains a future monitoring requirement for particulate matter, once performance specifications and operational requirements applicable to PM CEMS are promulgated. MACT requirements also include continuous monitoring of numerous operating parameters, including but not limited to: combustion chamber temperature, combustion gas exit temperature, baghouse inlet temperature, flue gas flow rate, hazardous waste feedrate, feedrate of semivolatile and low volatile metals, feedrate of total chlorine and chloride, and pressure drop across each baghouse cell.

The notification of intent to comply with Subpart EEE was submitted on October 2, 2000, as required. Because this submittal satisfies the requirements of 40 CFR 63.1212, that section of the Subpart is not included in the permit.

Section III of the permit contains monitoring requirements to demonstrate compliance with state regulations. There is a state limitation on fuel sulfur content, opacity, and particulate emissions from the kilns. Periodic monitoring requirements for opacity from the kilns are based on observation of the presence or absence of visible emissions. In the event visible emissions are observed, corrective action is required. If corrective actions do not result in the absence of visible emissions, VEE's are required to demonstrate compliance with the applicable opacity limit.

Opacity monitoring is deemed sufficient for demonstrating compliance with state regulations for these units since absence of visible emissions from a fabric filter is an indication that the control system is operating as designed. Furthermore, expected particulate emissions (based on a reasonable grain loading from the fabric filters) are well below emission limits established by state regulations.

Stone Processing Equipment
Most raw material crushing, screening, and conveying equipment is subject to existing source regulations, but several units are subject to state permits and NSPS Subpart OOO (nonmetallic mineral processing). Table II.A. of the permit contains a listing of approved components and applicable permits. Units affected by the NSPS are identified within the table.

Periodic monitoring for opacity from stone processing equipment is based on observation of the presence or absence of visible emissions. In the event visible emissions are observed, corrective action is required. If corrective actions do not result in the absence of visible emissions, VEE's are required to demonstrate compliance with the applicable opacity limit. Additionally, an annual performance test (Method 22 and/or Method 9) is required for NSPS units.

Opacity monitoring is deemed sufficient for these units on the following basis:

a) Emissions limits for the permitted units were established based on AP-42 emission factors and a properly operating wet suppression system. Absence of visible emissions from a screen is an indication that the wet suppression system is operating as designed.

b) A history of no visible emissions from the stone processing equipment supports the belief that these emission sources are in compliance with applicable particulate limits.

c) Estimated particulate emissions rates from adequately wetted stone processing equipment are generally very low.

Waste Fuel Blending and Storage
The primary fuel used for processing lightweight aggregate is hazardous waste. Giant Resource Recovery, Inc., the hazardous waste fuel provider, is located adjacent to Solite and, for Title V purposes, the two companies are considered jointly owned and operated. Giant Resource Recovery receives hazardous and non-hazardous wastes from off-site generators and blends the material into hazardous and non-hazardous waste fuels for Solite and other (off-site) facilities.

The offsite waste and recovery operations (OSWRO) MACT (40 CFR 63, Subpart DD) applies to off-site material management units (tanks, containers, oil-water or organic-water separators, surface impoundments, and transfer systems), process vents, and equipment leaks used in the handling of off-site waste materials. Monitoring requirements under this MACT standard are contained in Section VII of the permit.

The Benzene NESHAP applies to the facility and Section IX of the permit contains requirements pursuant to this Subpart. Because the total annual benzene (TAB) quantity for the facility is below 10 Mg/yr, the permittee is currently subject only to reporting and recordkeeping requirements under this Subpart.

Finally, NSPS Subpart Kb applies to Tank 23; Subpart Kb requirements are contained in Section VI of the permit.

Facility Wide Conditions
The OSWRO MACT and Benzene NESHAP apply facility wide to affected operations; other than those regulations, there are no facility wide conditions.

LEGAL AND FACTUAL BASIS FOR DRAFT PERMIT CONDITIONS:

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the Commonwealth of Virginia Federal Operating Permit Regulations for the purposes of Title V of the Federal Clean Air Act (9 VAC 5 Chapter 80 Article 1), and underlying applicable requirements in other state and federal rules. Applicable requirement means all of the following as they apply to emission units in a Title V source:

a. Any standard or other requirement provided for in the State Implementation Plan or the Federal Implementation Plan, including any source-specific provisions such as consent agreements or orders.

b. Any term or condition of any preconstruction permit issued pursuant to 9 VAC 5-80-10, Article 8 (9 VAC 5-80-1700 et seq.) of this part or 9 VAC 5-80-30 or of any operating permit issued pursuant to 9 VAC 5 Chapter 80 Article 5, except for terms or conditions derived from applicable state requirements or from any requirement of these regulations not included in the definition of applicable requirement.

c. Any standard or other requirement prescribed under these regulations, particularly the provisions of 9 VAC 5 Chapter 40 (9 VAC 5-40-10 et seq.), 9 VAC 5 Chapter 50 (9 VAC 5-50-10 et seq.) or 9 VAC 5 Chapter 60 (9 VAC 5-60-10 et seq.), adopted pursuant to requirements of the federal Clean Air Act or under ' 111, 112 or 129 of the federal Clean Air Act.

d. Any requirement concerning accident prevention under ' 112(r)(7) of the federal Clean Air Act.

e. Any compliance monitoring requirements established pursuant to either ' 504(b) or ' 114(a)(3) of the federal Clean Air Act or these regulations.

f. Any standard or other requirement for consumer and commercial products under ' 183(e) of the federal Clean Air Act.

g. Any standard or other requirement for tank vessels under ' 183(f) of the federal Clean Air Act.

h. Any standard or other requirement in 40 CFR Part 55 to control air pollution from outer continental shelf sources.

i. Any standard or other requirement of the regulations promulgated to protect stratospheric ozone under Title VI of the federal Clean Air Act, unless the administrator has determined that such requirements need not be contained in a permit issued under this article.

j. With regard to temporary sources subject to 9 VAC 5-80-130, (i) any ambient air quality standard, except applicable state requirements, and (ii) requirements regarding increments or visibility as provided in Article 8 (9 VAC 5-80-1700 et seq.) of this part.

k. Any standard or other requirement of the acid deposition control program under Title IV of the Clean Air Act or the regulations promulgated thereunder.

l. Any standard or other requirement governing solid waste incineration under ' 129 of the Clean Air Act.

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 9 VAC 5 Chapter 80 Article 1 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the state but is not federally-enforceable is identified in the draft Title V permit as such.

REQUEST FOR VARIANCES OR ALTERNATIVES:

None

COMMENT PERIOD:

The public notice appeared in the Danville Register and Bee on October 6, 2001. A public hearing and a second comment period were announced in the December 6, 2001 edition of the Danville Register and Bee.

Beginning Date: October 6, 2001 (ending November 5, 2001) and December 6, 2001.
Ending Date: January 25, 2002
All written comments should be addressed to the following individual and office:

Department of Environmental Quality
Lynchburg Satellite Office
7705 Timberlake Road
Lynchburg, VA 24502
Phone: (434) 582-5120 Fax: (434) 582-5125

PROCEDURE FOR REQUESTING PUBLIC HEARING:

During the public comment period any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for a public hearing shall be in writing to the above address and shall state the nature of the issues proposed to be raised in the hearing. The Director shall grant such a request for a hearing if he concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Solite (Cascade)
Registration #30297
Allowable Emission Calculations

Note:
In accordance with 9 VAC 5-40-240 D, Rule 4-4 for general process "combustion installations" does not apply because the facility is regulated under Rule 4-19 (9 VAC 5-40-2570).

SO2 from Kilns:

Rule 4-19 restricts fuel sulfur content to ≤ 3 lb/MMBtu.
There are no other limitations on SO2 from the kilns.

PM from Kilns:

Use Table 4-19 or:

E = 3.51 P, where
E = emission rate, in lb/hr, and
P= process weight rate, in tons/hr.

Emission Unit	Process Weight Rate (tons/hr)	Allowable PM (lb/hr)
Kiln 1	15	52.7
Kiln 2	15	52.7
Kiln 3	16	56.2
Kiln 3	18	63.2

Expected Particulate emissions can be calculated by assuming 0.01 gr/dscf in fabric filter exhaust. Each kiln can be controlled by any of 3 fabric filters, each having a volumetric flow rate of 52,000 cfm. Accordingly, expected particulate emissions are:

$$\frac{0.01 \text{ grains}}{\text{cu. foot}} \times \frac{52{,}000 \text{ cu ft}}{\text{min}} \times \frac{60 \text{ min}}{\text{hr}} \times \frac{1 \text{ lb}}{7000 \text{ grains}} = 4.5 \text{ lb/hr from any fabric filter}$$

NOx from Kilns:

There is no applicable limit for NOx emissions from the kiln.

Solite (Cascade)
Registration #30297
Calculation Procedures for Actual and Potential Emissions

Actual emissions for this facility may be calculated using the spreadsheet:

I:\common\lchbg\eis\cy98\30297cxx.wk4

PTE for SO2:
total SO2 = SO2 from fuel + SO2 from raw material.

For Solite Cascade, the SO2 emission factor (lb/ton) for SO2 from raw material = 16 S,
where S = the sulfur content of the raw material

Assuming all fuel sulfur is emitted, PTE for SO2 from fuel burning is:

Emission Unit	Heat Input Rating (MMBtu/hr)	SO2 from fuel (lb/hr)
Kiln 1	50	150
Kiln 2	50	150
Kiln 3	60	180
Kiln 3	65	195

Therefore SO2 PTE for the facility = 675 tpy (fuel) + SO2 from raw material

PTE for NOx:
Potential emissions of NOx, based on AP-42 emission factor of 1.9 lb/ton of feed, are:

Emission Unit	Process Weight Rate (tons/hr)	NOx Emissions (lb/hr)
Kiln 1	15	28.5
Kiln 2	15	28.5
Kiln 3	16	30.4
Kiln 3	18	34.2